

Application No. 09/500,994
Amendment filed November 5, 2003
Reply to Office Action August 6, 2003

Attorney Docket No. 033979-003
Page 2 of 7

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-16 (canceled).

Claim 17 (currently amended): An arrangement for connecting a ground connection of a semiconductor device on top of at least one layer on one side of a semiconductor substrate to ground on the reverse side of the substrate, wherein a metal plug extends through said at least one layer down into the substrate, an isolation means extends through said at least one layer down into the substrate and is arranged between the semiconductor device and the metal plug for delimiting the semiconductor device, and wherein an electrically conductive connector interconnects the ground connection and the metal plug.

Claim 18 (previously presented): The arrangement according to claim 17, wherein said plug extends deeper into the substrate than PN junctions located therein.

Claim 19 (previously presented): The arrangement according to claim 17, wherein the connector is a metal connector.

Claim 20 (previously presented): The arrangement according to claim 17, wherein said semiconductor device is a high frequency device.

Claim 21 (previously presented): The arrangement according to claim 17, wherein said semiconductor device is a power device.

Claim 22 (previously presented): The arrangement according to claim 17, wherein said semiconductor device is a bipolar transistor and said ground connection is an emitter connection.

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Attorney Docket No. 033979-003
Page 3 of 7

Claim 23 (previously presented): The arrangement according to claim 17, wherein said device is a MOS transistor and said ground connection is a source connection.

Claim 24 (new): The arrangement according to claim 17, wherein said isolation means is comprised of an oxide.

Claim 25 (new): The arrangement according to claim 17, wherein said metal plug is comprised of an etched hole filled in its entirety with metallic material.

Claim 26 (new): The arrangement according to claim 17, comprising a highly-doped plug contact region in said substrate at a lower tip of said metal plug.

Claim 27 (new): The arrangement according to claim 26 wherein said substrate is doped with a first doping type and said plug contact region is a doped region of said substrate, said doped region being doped with the first doping type and having a higher doping concentration than that of said substrate outside said doped region.

Claim 28 (new): The arrangement according to claim 17, comprising a plurality of metal plugs connected to said electrically conductive connector.